

ADB version 2

assessment
database



EPA Assessment Database Version 2 for ORACLE

User's Guide

DRAFT

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About the User's Guide

The User's Guide is designed to aid users with the functionality of the ADB v.2. It is not intended to familiarize the user with ORACLE. This user guide will help you in getting started with the ADB as well as understanding some of the features that the ADB will offer.

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Introduction

EPA's 305(b) Assessment Database (ADB) software was developed as a tool for state environmental agencies to store assessment information generated under Section 305(b) of the Clean Water Act (CWA). The US Environmental Protection Agency (EPA) supported the development and distribution of ADB software to help ease the burden of State reporting, encourage standardization of reporting between States, as well as facilitate the generation of the National Assessment Database and the biennial National Water Quality Inventory. The ADB software is designed to store assessment information in a manner consistent with EPA's *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA 2003) available at http://www.epa.gov/owow/tmdl/tmdl0103/2004rpt_guidance.pdf. In the 2004 *Guidance*, the EPA encourages States to integrate the reporting requirements under Sections 305(b) and 303(d) of the Clean Water Act (EPA 2003). ADB v.2 is designed to facilitate the integration of the two programs.

The main function of the ADB v.2 is to store assessment information in compliance with EPA's *Guidance* on generating 305(b) and 303(d) reports. The ADB v.2 can also produce the attainment category report, as defined by the *Guidance*, based on that assessment information. This report can be exported from the database in tabular format.

What's New in Version 2.0?

Assessment Units. ADB v.2 is organized around assessment units instead of waterbody segments. In version 1 of the ADB, users defined waterbodies of a specific type (i.e. river, lake) and then established segments within these waterbodies to which they assigned assessment information. A unique identifier (ID) was then created by concatenating waterbody ID and segment ID with an underscore. In the new system, the "waterbody" level has been removed and users can assign unique identifiers directly to their assessment units. These unique identifiers can be up to 50 characters in length and there are no required conventions for setting up these identifiers for the assessment units.

Waterbody Types. In ADB v.2, users can create assessment units that have multiple waterbody types. A single assessment unit can contain both rivers and lakes, or mileage within an assessment unit can be divided between perennial and intermittent river types. Additionally, any other waterbody type combination desired by the user can be entered.

Data Cycles. ADB v.2 can store data for multiple assessment cycles (i.e., both 2000 and 2002 assessment data).

Locational Data. The ADB v.2 does not have fields to store locational information. EPA encourages States to store locational information for their assessment units by georeferencing them to the National Hydrography Dataset (NHD) and has developed a Reach Indexing Tool (NHD-RIT) to facilitate this process. The NHD-RIT will also facilitate the creation of non-NHD shapes for estuaries and coastal waters that are not represented in the NHD. For more information about the NHD-RIT and the georeferencing process visit <http://www.epa.gov/owow/monitoring/georef>.

The ADB v.2 will also allow States to interact with custom tables if they would like to add fields for locational data. All locational materials prepared by states should include a field that corresponds directly to the assessment unit IDs.

New Cause and Source Codes. The ADB v.2 includes significantly more impairment (cause) and source codes. Impairment codes are based on the characteristics available in EPA's Storage and Retrieval System (STORET). These new codes will allow users to enter more detailed impairment and impairment source information in the database.

Required Linkages. The ADB v.2 requires links between designated use, impairment, and source information for the assessment units. In prior versions of the ADB, these linkages were optional.

Observed Effects. The ADB v.2 allows States to record information about observed effects. An observed effect is any parameter that a State monitors, but that may not be defined as an impairment to a designated use in the State's water quality standards. One example is a fish kill whose cause was indeterminate. If a State's water quality standards do not specifically state that "fish kill" is an impairment to aquatic life use, the fish kill becomes an observed effect. A user can specify which parameters are observed effects for the current State and cycle via a look-up table in the ADB.

TMDL Integration. The ADB v.2 allows a user to associate TMDL IDs with an assessment unit. This feature facilitates integration of the Section 303(d) and 305(b) lists.

What's New in Version 2.1?

The following new features were developed by implementing changes submitted by users of ADB v.2. Many of the changes deal with the user interface and management of data within the ADB, rather than the major organizational changes that made ADB v.2 different from ADB v.1.

Reorganized Assessment Units screen. The new screen is better organized and the buttons have clearer descriptions.

Migrate to New Cycle. States can now migrate data from cycle to cycle so they do not have to re-enter data.

Export from Browse. Users can export what they see in the "Full Browse" screen to a .csv file.

Shell to External Applications. Users have the ability to access other applications from the ADB and to pass the assessment unit ID to this application.

User Category. Users can create their own categories for internal reporting and management purposes. Assessment units will still be placed in one of the five EPA-defined categories when submitted.

Limit Uses by Class. State or jurisdictions that use classes to group designated uses can now associate those classes with assessment units. When assigning uses to the assessment units, you will only be able to select uses associated with the designated class.

TMDLs Associated with Impairments. In version 2.1, TMDLs are associated with individual impairments rather than entire assessment units.

Data Exports. In addition to the category listing export, users can now export the 303(d) list and a list of category 4A and 4B assessment units.

Reports Module. The new Reports Module allows users to create two different kinds of reports:

1) **Summary Reports** that allow users to create use support summaries, impairment summaries, and use summaries for a selected state, cycle and water type, and 2) Comprehensive **Two-page Reports** for selected assessment units.

System Overview

The ADB v.2 is a relational database application based on an ORACLE database with a Visual Basic user interface. The ADB was moved from Microsoft Access to ORACLE to expand the network capability of the ADB. The ADB includes two files, a user interface file and a database file. The user interface file must be installed locally on each user's machine. This file contains all of the graphical screens and tools that allow the user to enter and view data. The second file is a database file (ORACLE 8.1.x) that stores all of the data. This file may be stored on an individual machine or on a server for access by multiple users. An advantage of this two-file design is that the graphical interface can be improved without affecting the table structure or data stored in the database file.

Capabilities

Some of the things you can do with the ADB v.2:

- Create category listing reports for the new guidance
- Create reports that can be presented in ArcView
- Store documents associated with assessment units
- Add comments in Rich Text format
- Connect to different data sources (Oracle, SQL Server, Access, ODBC)
- Browse data in table form
- Migrate data from previous cycles
- Create summary reports for impairments, sources, and assessment units

Getting Started

What You Need

The purpose of the ADB is to store and track assessments using a core unit called an “assessment unit” (AU). An AU is similar to the “waterbody segment” in version 1 of the ADB, with assigned designated uses based on the State’s water quality standards. These designated uses can be assessed and the assessment results stored in the ADB. Before you get started with the ADB, you’ll want to take some time to examine your assessment methodologies and data tracking techniques. You may want to consider how you want to define your AUs. Since Category 5 waters become the 303(d) list, make sure to delineate these AUs appropriately and assign them the correct size. The *Guidance* looks to States to provide information about the status and progress made towards achieving comprehensive assessment of all waters in the State for the Integrated Report. This means that you will need to think about how to categorize the waters not currently part of your 305(b) program. You will want to think about how to break up these unassessed waters into AUs. If you georeference your AUs to NHD, there may be GIS tools available from EPA to help you with this process.

You will also want to have a copy of your State’s water quality standards document on hand. ADB v.2 uses EPA Water Quality Standards Database (WQSDB) as the basis for the “uses” in the ADB. You can obtain a copy of your State’s designated uses as they appear in the WQSDB from <http://www.epa.gov/ost/wqs>.

Installing the ADB

For detailed instructions on installing the ADB, see Appendix A of this document “Installing the ADB” available in the “Reference” section at <http://www.epa.gov/waters/adb>. There are two parts to the installation of the ADB: installing the user interface (data entry and viewing forms), and installing the database (the actual Oracle data tables). You may want to have your ORACLE database administrator (DBA) do the database installation for you.

Your DBA can also set up users for the ADB. There are two kinds of ADB users, “Administrators” and “Users.” Personnel who have been assigned the an administrator role can add, delete and modify data. Personnel who have been assigned a user role can only view data. The ADB v.2 comes with a default user called ADBUSER (this is also the password). ADBUSER has administrative privileges, so all of your assessment data may be entered using this login. You can also have your DBA remove ADBUSER if database security is a concern.

Starting the ADB

After installing the ADB Interface, you will have a new item on your *Start->Programs* menu in Windows called **ADBv2 for Oracle**. Select **ADBv2** from this menu to start the application. You will be prompted to enter the database name, a user name and password. Use the default settings (shown below) or check with your Oracle DBA to find the appropriate entries for this dialog.

| | |
|----------------|---------|
| Database Name: | ADB |
| User name: | ADBUSER |
| Password: | ADBUSER |

Default settings for accessing ADB v.2

The first time you start the ADB, you will be prompted to select the State with which you will be working. If no data exists for the current cycle, you will be asked if you want to begin working on the current cycle. If you click **No**, you will then be asked to select an existing cycle. The ADB will default to this selected State and cycle the next time you start the ADB. You can change the State and cycle you are working with at any time using the **Data** menu.

Demo Data

The ADB is currently loaded with two cycles of demo data. It is not necessary for you to delete this data before you start. Adding new AUs, deleting AUs, adding impairments or comments, or any other changes, may be made to this demo data without affecting your State's data in any way.

Backing-up and Restoring Data

You can create a backup of the data in the database by using the Back-up feature. To do this, open the ADB by going to the **Start->Programs->ADBv2 for Oracle** menu and choose **ADBv2**. From the **Data** menu, click on **Back-up/Restore**. The "Data Back-up/Restore Data" dialog box will appear.

F13 - BACK-UP DATABASE AND RESTORE FROM FILE

Data Back-up/Restore Data

| Back-up | Restore |
|---|--|
| <p>Back-up Options</p> <p><input checked="" type="radio"/> Back-up All</p> <p><input type="radio"/> Select Cycle and State</p> <p>Files associated with Assessment Units will not be backed-up. Click here to see a list of files. Files</p> <p>State: <input type="text"/></p> <p>Cycle: <input type="text"/></p> <p>Data will be saved in C:\ADBdata\backup\XXAll_8-23-2002\</p> <p>Back-up</p> | <p>Restore Options</p> <p><input type="radio"/> Delete and Replace (This will delete all of the current data that matches the state and cycle)</p> <p><input checked="" type="radio"/> Replace (This will replace any Assessment Units in the current data that match the back-up file. This will not change any Assessment Units not in the Back-up file)</p> <p>Back-up State <input type="text"/></p> <p>Back-up Cycle <input type="text"/></p> <p>Choose Back-up</p> <p>View Assessment Units</p> <p>Restore</p> <p>CLOSE</p> |

Under "Back-up" click the **Back-up All** radio button to create a backup of all data in the ADB, including the sample data, by creating an Openme.txt file in **C:\ADBdata\backup\XXAll_***.

You can create a backup of a subset of data in the database (for a specific cycle and state) by clicking the **Select Cycle and State** button. Specify the "State" and "Cycle" that you want to create a backup for, then click **Back-up**. This will create an Openme.txt file in **C:\ADBdata\backup\[state abbreviation]**.

There are two options for restoring data. The first-option **Delete and Replace**, deletes any data that was not originally included in the demo data and restores other data to its original state. Any additional AUs, and the new data associated with them, will be deleted. The second option, **Replace**, only restores the original data. All AUs added to the demo data will be untouched. To restore data, choose the type of restore you want to perform under “Restore Options.” then specify the “Back-up State” and “Back-up Cycle.” Next, click on the **Choose Back-up** button and navigate to the *Openme.txt* file in *C:\ADBdata\backup\XXAll**.

Managing Data with the ADB

To track the assessments and assessment results for your AUs, the ADB v.2 requires you to enter information about the type and quality of the assessment that was performed. If an AU is not meeting one or more of its designated uses, then the causes of impairment for each use, as well as the impairment's source, can be recorded. This section will give an overview of how to enter an assessment into the database. To access assessments, click on the **Assessments** button on the main "EPA Assessment Database" screen.

The screenshot shows the 'ASSESSMENT UNITS' dialog box. On the left is a 'Side Bar' with icons for 'Uses', 'Assessment Documentation', 'Impairments Observed Effects', 'Sources', and 'Determine Category'. Below the side bar is an 'Other Information' section with buttons for 'Assessed on:', 'Add Comment', 'Add File', and 'Monitoring Information'. The main area is titled 'ASSESSMENT UNITS' and contains a 'Select an Assessment Unit' section with dropdowns for 'By ID' and 'or by Name', a 'GO' button, and a 'Limit list by' dropdown. To the right of this is an 'Assessment Unit Functions' section with buttons for 'Create New Assessment Unit', 'Update Current Assessment Unit', and 'Delete Current Assessment Unit'. Below these is an 'Information' section with fields for 'Assessment Unit ID', 'Assessment Unit Name', 'WATER TYPE', 'SIZE', 'UNIT', 'Add, Delete Water Types' (with 'Add Type' and 'Delete Type' buttons), 'Use Class' (with a 'See Definition' button), 'User Defined Category' (with a 'See Definition' button), 'Location Description', and 'Trophic Status'. Annotations with arrows point to various elements: 'Side Bar' points to the left sidebar; 'Select Assessment Unit by ID or Name' points to the 'By ID' dropdown; 'Add, Delete, Update Assessment Unit' points to the 'Assessment Unit Functions' buttons; 'Add Files, Comments, Monitoring Information' points to the 'Other Information' buttons; 'If State or Jurisdiction has Classes, Assign Use Class to Assessment Unit' points to the 'Use Class' dropdown; and 'Assign User Defined Category' points to the 'User Defined Category' dropdown.

Figure 1. Main Assessment Unit dialog.

Assessments Units

When **Assessments** is selected from the main dialog, the user is able to access assessment information for one AU, and then may view, add, update, or delete assessment information from this screen (Figure 1). You can select an existing AU by ID or Name by clicking on the **Select an Assessment Unit** drop downs in the upper middle section of the dialog. You may also choose to limit by category the list of AUs that appear in the **Select an Assessment Unit** drop downs should you want to examine the information for waters that fall within a specific group. Additionally, comments, files, and monitoring dates can be added to this database.

Assessment information associated with an AU may include designated uses, assessment metadata, causes of impairment (or observed effects), and sources of impairment. This information can be accessed using the button bar on the left side of the dialog.

To return directly to the “Assessment Units” screen from anywhere in the database, click on the **Assessment Unit** button. To exit the “Assessments” portion of the ADB application, go to the “Assessment Units” screen and click **Close**. This will return you to the main ADB menu.

Sidebar Menu Options

Throughout the application, there are a series of buttons that line the left hand side of each screen. These buttons will always take you to the selected information, however, the level of information detail will depend on the screen from which they are accessed. For example, the **Impairments** button always lists contaminants associated with selected AUs. Clicking on the **Impairments** button on the “Assessment Units” screen will show all impairments associated with a selected AU. However, clicking on the **Impairments** button on the “Uses” screen will show only the impairments associated with the selected AU and selected use. A brief description of each button follows:



Assessment Units: This button takes the user to the “Assessment Unit” screen.



Uses: This button takes the user to the “Uses” screen.



Assessment Documentation: This button shows metadata associated with the AU and designated use. Metadata can be added, removed, or changed when accessed through the sidebar on the “Uses” screen.



Observed Effects: This button shows observed effects associated with the AU and designated use. Observed effects can be added, removed, or changed when accessed through the sidebar on the “Uses” screen.



Impairments: This button shows impairments associated with the AU and designated use. Impairments can be added and deleted when accessed through the sidebar on the “Uses” screen.



Sources: This button shows sources of impairment for the selected AU, designated use, and impairment. Sources can be added and deleted when accessed through the sidebar on the “Impairments” screen.



Determine Category: This button informs users of the AU’s category as defined in the *Guidance*.

Adding an Assessment Unit

The user may add new AUs by clicking **Create New Assessment Unit** in the “Assessment Unit Functions” section on the “Assessment Units” screen. This opens a new dialog that prompts the user to enter the AU ID, name, and location (Figure 2). All of these data elements are required.

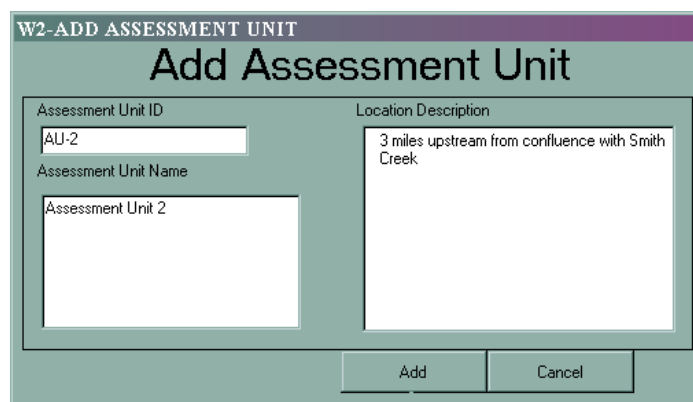
The dialog box is titled "W2-ADD ASSESSMENT UNIT" in a purple header bar. Below the header, the main title "Add Assessment Unit" is centered. The form is divided into two columns. The left column contains two text input fields: "Assessment Unit ID" with the value "AU-2" and "Assessment Unit Name" with the value "Assessment Unit 2". The right column contains a larger text area labeled "Location Description" with the text "3 miles upstream from confluence with Smith Creek". At the bottom right, there are two buttons: "Add" and "Cancel".

Figure 2. Add an Assessment Unit dialog.

After the information is entered and the **Add** button is clicked, another dialog opens that prompts the user for water type and size (Figure 3). Once you select the desired water type, the size units you should enter will appear in the dialog. Click **Add** when you are finished.

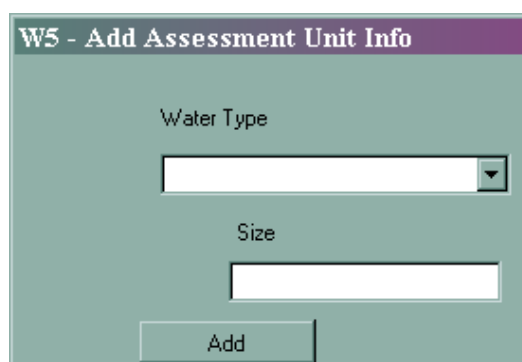
The dialog box is titled "W5 - Add Assessment Unit Info" in a purple header bar. The form has a "Water Type" label above a dropdown menu. Below that is a "Size" label above a text input field. At the bottom, there is an "Add" button.

Figure 3. Water Type dialog.

Once this information is entered, the new AU is created and will appear in the drop down-boxes and frames on the "Assessment Units" screen. If you wish to add additional water types to an AU, click on the **Add Type** button in the "Information" section of the "Assessment Units" dialog.

Deleting or Updating Assessment Information

An AU may be deleted by selecting its name or ID from the *Select an Assessment Unit* drop-down boxes and clicking the **Delete Current Assessment Unit** button. This will remove the AU and all related assessment information from the database.

An AU may be updated by selecting its name or ID from the drop-down boxes so that the descriptive information for the selected unit appears in the "Assessment Units" screen. In the "Information" screen, the user may enter a new name, ID, or location and click the **Update Current Assessment Unit** button to replace the former values. The size may be updated by double-clicking on the current value.

Associating a Use Class with an Assessment Unit

For States or jurisdictions that use a class system to group designated uses, the ADB v.2 allows users to add a class to a new AU. After adding a new AU, click the **Use Class** drop-down box to see a list of available classes. *Note: the “Use Class” drop-down will only be visibly if the state you are working on uses the class system.* The **See Definition** button will give a description of the selected class. After the appropriate class is selected, click the **Update Current Assessment Unit** button under “Assessment Unit Functions.” When you add designated uses to the AU, the list of uses you may choose from will be limited to uses associated with the class you assigned to the AU. You can change the class of an AU in the main “Assessment Units” screen.

Assigning a User-Defined Category to an Assessment Unit

In some cases, States have categories for reporting at a State and local level. ADB v.2 allows users to create “User Defined Categories.” The name and description of these categories is left completely to the discretion of the user. While these categories may be applied to group AUs for a State’s own reporting purposes, it is important to remember that the AUs will still be placed in one of the five categories defined by the *Guidance* that are based on use support.

To create your own categories, select **User Defined Categories** from the **Modify** menu. Click **Add Category** and type the name or ID of the category (10 character maximum) into the text box and click **OK**. Select the category from the **User Defined Category** drop-down box and then type the category description (4,000 category maximum) in the space below. Click **Save Description** to save the new category and description to the database.

Adding Uses

The **Uses** button will load a screen that lists all designated uses for the selected AU (Figure 4). Each use will be categorized as “Assessed” or “Unassessed.” If the designated use is assessed, it will also list the AU’s use support (i.e fully supporting, insufficient information, or not supporting). Users may add designated uses to the selected AU and add or view assessment metadata associated with each use.

| Assessed Uses | Use Support | User Flag | Threatened? |
|-----------------------|------------------|-----------|-------------|
| Fish and Aquatic Life | Fully Supporting | | |

| Unassessed Uses | Use Support |
|-----------------|-------------|
| Recreation | NotAssessed |

Figure 4. Uses dialog.

To add a use to an AU, click on the **Add Uses** button at the top of the side bar. The “Select a Use” dialog will open (Figure 5). You can select a single designated use, or select multiple uses by holding down the **Shift** key.

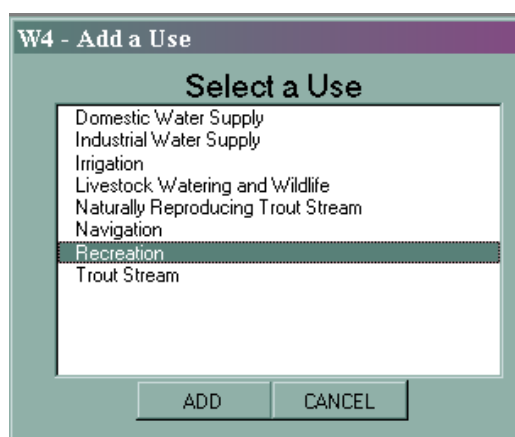


Figure 5. Select a Use dialog.

When you click the **Add** button, the selected use(s) will be added to the list of unassessed uses on the “Uses” screen (Figure 4).

Assessments

You can enter the AU’s use support for these designated uses by double clicking on one of them, or by selecting one (or several by holding down the **Shift** key) and clicking on the **Assessment Documentation** button. When you do this, the “Assessment Documentation” dialog opens (Figure 6). Note that you cannot change **Use Support** for a designated use without assigning at least one assessment type and confidence rating.

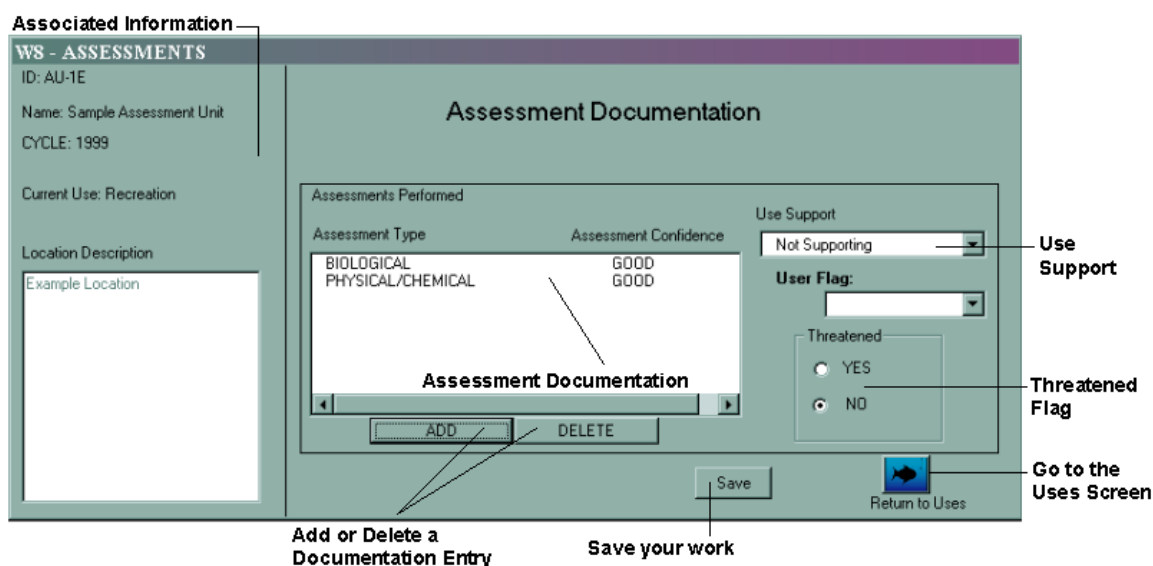


Figure 6. Assessment Documentation dialog.

The “Assessment Documentation” dialog shows all assessment documentation currently associated with the selected designated use. Assessment documentation in the ADB includes the type of assessments that were made (e.g. biological, habitat) and the confidence in the assessment (e.g., good, fair).

Use Support and Category

EPA’s *Guidance* calls for each AU to be placed in one of five unique assessment categories. The ADB v.2 will automatically assign AUs to the appropriate category based on the use support ratings entered in the database. You can view the category definition assigned to an AU by clicking on the **Determine Category** button on the side bar. You can read a detailed description of each category in the *Guidance*, and also find a description of each category in the database by selecting **Show Category Definitions** from the **View** menu (Figure 7).

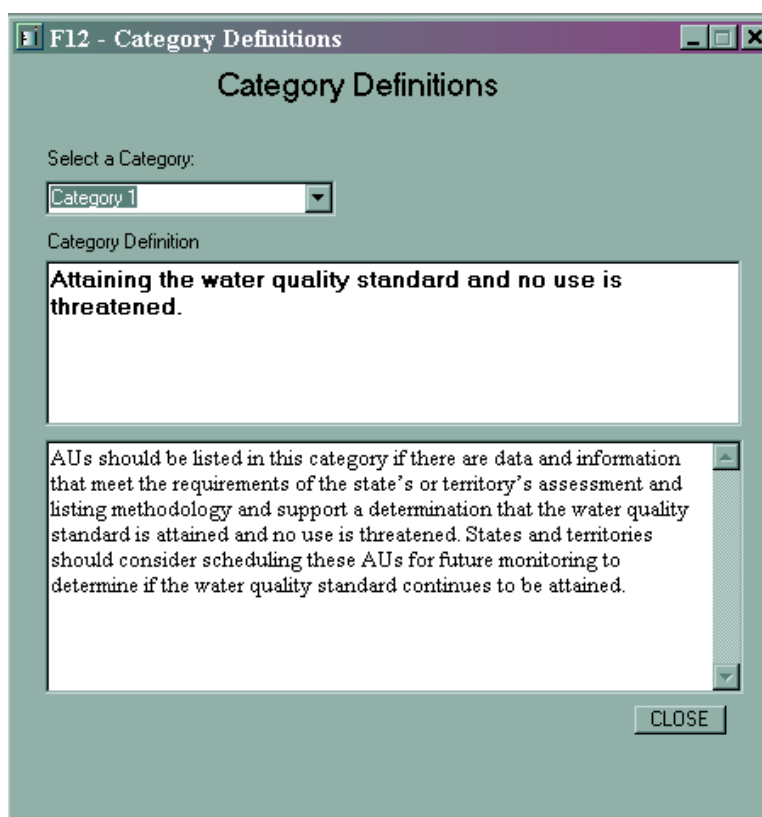


Figure 7. Category Definitions.

Assessment Documentation

To add assessment documentation for a designated use, change the **Use Support** rating from “Not Assessed” to one of the other categories. If an AU is fully supporting the designated use, you can use the radio button below the **Use Support** drop down to indicate whether or not the use support is threatened. If you identify a water as threatened, it will affect its category rating. Click on the **Add** button to add assessment metadata. When asked if you want to save changes to the AU, click **Yes**. This will open the “Add Assessment Metadata” dialog (Figure 8).

Figure 8. Add Assessment Metadata dialog.

The metadata choices in the database should reflect the decision logic in a State's assessment methodology document. The required metadata elements are *Assessment Type* and *Confidence*. Descriptions of the options for both choices are below.

Types of Assessments

Biological: A biological assessment can include any type of biological (bioassessment) indicators that were used (e.g., macroinvertebrate indicators, fish-IBIs, etc.).

Habitat: A habitat assessment can include habitat indicators or other types of geofluvial analyses related to such features as riffle and pool analyses, substrate, bank stability, and stream buffer zone plant cover analyses.

Physical/Chemical: This is a broad category that can include any number of different types of analyses. Physical monitoring involves measures for such system properties as pH, turbidity or temperature. Chemical monitoring is typically performed for specific analytes (e.g., copper) that can be defined through reference to CAS registry numbers. If clearly defined in a State's assessment methodology document, this category could cover the xenobiotic chemical pollutants in tissue residues associated with fish or wildlife consumption advisories.

Toxicological: This category includes use attainment conclusions based on such methods as bioassays. These can include acute or chronic bioassays for ambient water or for interstitial pore water. Other types of monitoring information may be relevant depending on how toxicity concerns are addressed in a State's assessment methodology document. For instance, if clearly defined in a State's assessment methodology document, this category could cover the xenobiotic chemical pollutants (e.g., mercury/methyl-mercury) in tissue residues associated with fish or wildlife consumption advisories. This category would also be appropriate to document biogenic toxic concerns related to red tides, cyanobacteria toxins, toxins from *Pfesteria*, or other harmful algal blooms (HABs).

Pathogen Indicators (Microbials): This assessment type can include any standard pathogen (microbial) indicators. An example of a pathogen indicator would be *E. coli* counts. It can also include conclusions from screening test determinations for actual bacterial and viral pathogens (e.g., tests for *Cryptosporidium*).

Other Public Health Indicators: Other indicators related to public health (i.e., oil spills) that could not be categorized by other assessment types.

Other Aquatic Life Indicators: Other indicators related to aquatic life that could not be categorized by one of the other assessment types.

When making entries into the ADB, the user should be certain that a given metadata category is related to the specific use being assessed. For example, it would not make sense to have a *Habitat* assessment associated with a *Primary Contact Recreation* use. The State's Assessment Methodology Document should describe what types of assessment metadata categories can be associated with each WQS designated use.

Assessment Confidence

The database requires that a statement be made about the confidence of the assessment, or the confidence of the data used to make the assessment. The database has defined four levels of confidence on a scale of 1 to 4, with 1 being the lowest and 4 being the highest.

1. Low
2. Fair
3. Good
4. Excellent

How a State assigns these levels of confidence should be explained in their Assessment Methodology Document.

User Flag

The "User Flag" field may be used to track certain data situations in the ADB v.2. For example, if a user wants to indicate that an assessment partially supports a designated use, (s)he can enter the word "Partial" in the "User Flag" field for that assessment unit. The User Flag has no effect on the AU's category.

After you have entered all of the applicable assessment documentation, click **Save** to save your changes and click on **Return to Uses** to get back to the "Uses" dialog.

Assessment Method Codes

Users can add Assessment Method codes from ADB v.1 under "Other Assessment Information" by clicking on the drop-down box and selecting a code. Users may also add their own Assessment Codes by clicking on **Modify->Assessment Methods** from the menu bar. Assessment Methods are not required as part of the assessment documentation.

Impairments

In ADB v.1, impairments were assigned directly to the waterbody segments. In ADB v.2, impairments are assigned to uses that are assigned to an AU. To add or view impairments, select an assessed use from the “Uses” dialog and click on the **Impairments** button. This will open the “Impairments” dialog (Figure 9).

The screenshot shows the "U2 - IMPAIRMENTS" dialog box. On the left is a sidebar with icons and labels: "Uses", "Observed Effects(0)", "Add Impairments", "Sources", "Assessment Unit", and "Determine Category". The main area is titled "Impairments" and contains several sections:

- Top Section:** "Double Click to show impairment description" with a list box containing "Total Fecal Coliform". To the right are radio buttons for "Pollutant?" (Yes/No), a date field for "Date Scheduled to receive a TMDL", a dropdown for "Confidence in Impairment", an "UPDATE" button, and a "Comments" text area.
- Middle Section:** "Add or Delete an Impairment" with "ADD" and "DELETE" buttons.
- Bottom Section:** "Assessment Unit" with a text box containing "AU-1E" and "Water Name" with a text box containing "Sample Assessment Unit". To the right is "Use - Support" with a text box containing "Recreation - Not Supporting" and a button labeled "303(d) Information".

Annotations with arrows point to specific elements:

- "Impairments for this use" points to the "Total Fecal Coliform" list box.
- "Mark an impairment as a pollutant or non-pollutant" points to the "Pollutant?" radio buttons.
- "Indicate confidence that this impairment has prevented the assessment unit from supporting the designated use" points to the "Confidence in Impairment" dropdown.
- "Add a comment to the selected impairment" points to the "Comments" text area.
- "Assessment Unit Information" points to the "Assessment Unit" and "Water Name" text boxes.
- "Manage 303(d) information" points to the "303(d) Information" button.

Figure 9. Impairments dialog.

You can do several things from the main “Impairments” dialog. You can double click on the **Impairments** to view their descriptions, or select and delete them. You can enter a date that the AU is scheduled to receive a TMDL by selecting an impairment and clicking on the calendar button near the right side of the screen. You can also associate impairments with TMDLs by clicking on the **303(d) Information** button near the bottom of the screen. When you click this button, you can select an EPA-approved TMDL. (See the section on Management of 303(d) Information). You should note that information entered on the main “Impairment” screen can influence what category an AU falls into. For example, if you determine that an impairment is not a pollutant, then that can change the AU to a category 4C.

Adding an Impairment

To add an impairment, either click on the **Add** button near the middle of the screen or click the **Add Impairment** button on the sidebar. This will open the “Add Impairments” dialog (Figure 10). You can select the impairments you want to assign to a designated use from the list box on the right side of the dialog. There are currently about 500 impairments to choose from, and this number will grow over time. To make it easier to find the impairments you need, this program defaults to only show the

12 - ADD IMPAIRMENTS

Limit list of impairments with these options

CHOOSE ONE

☐ SHOW ALL

☐ SHOW ONLY:

☐ SHOW CURRENTLY USED

SELECTION OPTIONS

☒ Select and Identify

☐ Multi-Select

IMPAIRMENTS

| Name | CAS Number |
|--|------------|
| .alpha.-BHC | 319-84-6 |
| Alterations in wetland habitats | |
| Ambient Bioassays -- Acute Aquatic Toxicity | |
| Ambient Bioassays -- Chronic Aquatic Toxicity | |
| Ammonia (Unionized) - Toxin | 7664-41-7 |
| Aquatic Plants - Native | |
| Arsenic | 7440-38-2 |
| Atrazine | 1912-24-9 |
| Benthic-Macroinvertebrate Bioassessments (Stre | |
| Beryllium | 7440-41-7 |

ADD **CLOSE**

Return to Impairments screen

Add impairments

Information

Atrazine. CAS Registry Number: 1912-24-9. Code a Safe Drinking Water Act Standard.

Search **Refresh**

Search By:

Search String:

GO

Description of selected impairment

Search for an impairment

Figure 10. Add Impairment dialog.

impairments you have assigned to other AUs. You can view all of the available impairments by clicking the **Show All** radio button. You can also show select groups of impairments (i.e., nutrients, pathogens, bioassays, etc.) by clicking the **Show Only** radio button and selecting one of the groups from the drop down list. Additionally, the ADB v.2 allows you to create custom groupings of impairments (see the section on **Look-Up Tables**).

The “Add Impairments” dialog has a built in search feature that will allow you to limit the list of impairments by words or phrases. In the “Search” portion of the dialog, select the type of search you would like to perform. You can search by impairment name, CAS number, or impairment description. Type in the corresponding search text and click on **GO**. The **Impairments** list will show only the impairments that contain the word or phrase you searched. Clicking **Refresh** will return the list to its previous state before the search.

To view the information for an impairment, select the impairment from the **Impairments** list. The description for the impairment will appear in the “Information” section. If you would like to select multiple impairments to assign to a designated use, click on the **Multi-select** radio button. This will allow you to select multiple impairments in the **Impairments** list by holding down the shift key, but the impairment description will no longer be updated in the “Information” section. When you are finished adding impairments, click **Add** to update the data and return to the main “Impairments” dialog.

To get back to the “Uses” screen when you are finished entering impairments, click on the **Uses** button on the sidebar.

Observed Effects

Observed effects are added to a designated use similarly to the ways impairments are added. However, observed effects can be added to uses that are ‘Fully Supporting’ and not threatened, whereas impairments cannot. Remember, observed effects are monitoring observations that may indicate a decline in water quality, but which may not be defined in the State’s water quality standards as an impairment. Secchi Depth measurements or fish kills might be examples of observed effects. To find out how to assign observed effects, see the section on **Look-Up Groups**. For a discussion on observed effects and how to use them, see the *ADB Best Practices Document* available from the Reference section at <http://www.epa.gov/waters/adb>.

To add an observed effect to a designated use, select the use from the “Uses” dialog and click on the **Observed Effects** button on the side bar. This opens the “Observed Effects” dialog which will show you all of the observed effects currently associated with the selected use. To add observed effects, click on the **Add** button. The “Add Observed Effects” dialog functions similarly to the “Add Impairments” dialog described in the previous section.

Sources

In ADB v.2, sources are associated with the impairments for each designated use. To add sources, select the impairment from the “Impairments” dialog and click on the **Sources** button. This will open the “Sources” dialog (Figure 11). By default, sources will be associated with whatever impairment was last selected. This impairment will show in the title. To associate a source with more impairments, select additional impairments in the “Impairments Affected” box. Clicking on **Add** will take you to an “Add Sources” dialog that is very similar to the “Add Impairments” dialog. You will be able to do the same types of searches and groupings as you could in the “Impairments” dialog.

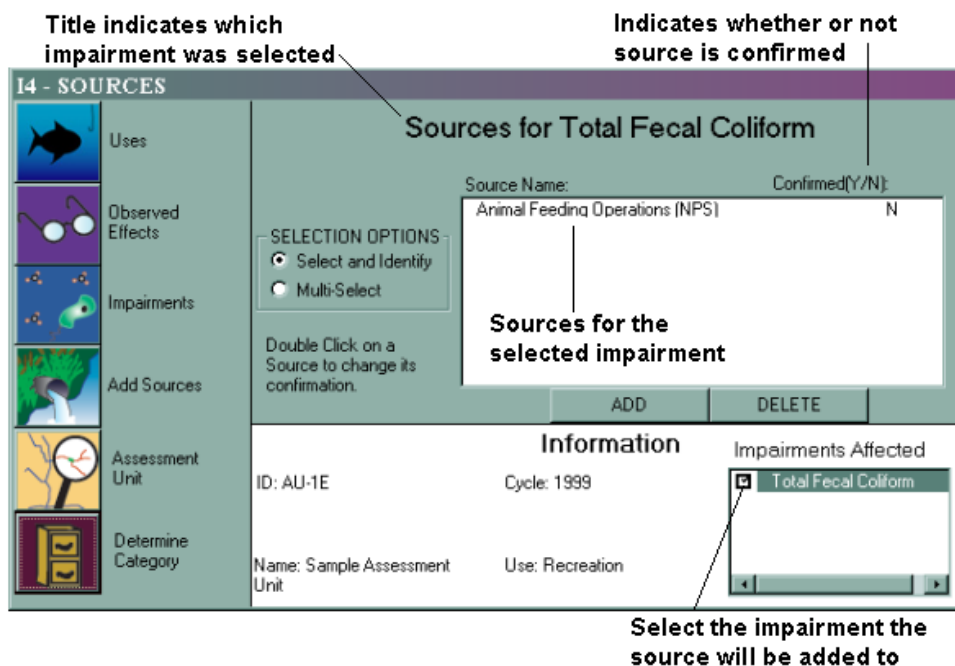


Figure 11. Sources dialog.

The “Sources” dialog allows you to indicate whether the sources you enter for impairments are “Confirmed (Y)” or “Unconfirmed (N)” (See Figure 11). The default for sources is “N.” You may confirm a source by double-clicking on it. You may also change source confirmation by clicking on **Data ->Confirm Sources** in the menu bar (Figure 12). *Note: You should be in the “Assessment Units” screen or the main database screen to confirm sources through the **Data** menu.*

Figure 12. Confirm Sources dialog.

To use the “Confirm Sources” dialog, select an AU. Now, you can confirm **All Uses with Sources** (the default) by clicking the **Confirm** button. If you want to confirm sources with specific uses, click the **Apply to Specific Uses** radio button, select the sources that appear in the text box and click the **Confirm** button. You can also confirm sources for specific impairments of a specific use by clicking the **Apply to Specific Impairments** radio button, selecting an impairment from the drop-down box, and clicking **Confirm**.

Managing 303(d) Information

The **Impaired Waters 303(d)** button on the main database screen functions similarly to the “Browse” feature (see the section on **Browse**). The user can view AUs by selecting one of the options shown in Figure 13. Once an AU is selected, users can view assessment information by clicking on the tabs in the screen.

Selection Options

- ☐ Choose IDs by Category
- ☐ Choose IDs by TMDL ID
- ☐ Choose IDs by 303(d) Listing IDs
- ☐ Choose by Impairment
- ☐ Choose by Source

Figure 13. Impaired waters selection options.

Users can access the “Impairment Information: 303(d)” screen (Figure 14) by clicking the **Manage Impairments** button. *Note: The “Impairment Information: 303(d)” screen is also accessible through the main “Impairments” screen in the database.*

T1 - Impairment Information: 303(d)

Impairment Information: 303(d)

Assessment Unit
AU-1E

Water Name
Sample Assessment Unit

In order to be in Category 4A or 4B, ALL impairments must be moved to these categories, and, there must not be any impaired or threatened uses without impairments

Impaired or Threatened Uses without impairments

Add Impairments

Category 5

Alterations in wetland habitats
Total Fecal Coliform

View Information

Category 4B

View Information

Category 4A

View Information

Determine Category

To move an impairment from one Category Bin to another, simply select the impairment and drag it to one of the other bins.

CLOSE

Figure 14. Impairment Information: 303(d) dialog.

Here, users can move an AU between categories 5, 4B, and 4A by clicking and dragging the impairment to another “bin.” Before AUs can be moved out of Category 5, impairments have to be linked to AUs that are “Not Supporting” or “Threatened.” If an AU needs to have impairments linked to a use, that use will appear in the text box in the top of the screen (Figure 15). Impairments can be added with the **Add Impairments** button. After an impairment is added, the impairment will appear in a category.

Figure 15. Impaired or Threatened Uses without Impairments.

You can assign 303(d) List IDs with **View Information** button under Category 5. The AU can be move from Category 5 to other categories. To move an AU from Category 5 or 4A to Category 4B, the user will have to enter an “Expected to Attain” date. You may also enter implementation actions with the **Implementation Action** button below the Category 4B box. To move an AU from Category 5 or Category 4B to Category 4A, a TMDL must be assigned (Figure 16).

| TMDL IDs | TMDL NAME | ESTABLISHMENT DATE |
|----------|-------------------|--------------------|
| 212 | CANE CREEK | 8/24/1999 |
| 1451 | CASH HOLLOW CREEK | 3/20/2001 |
| 1531 | JOHNSON CREEK | |
| 1596 | NORTH FORK FORKED | |
| 1635 | ROAN CREEK | 5/14/2001 |
| 1655 | SINKING CREEK | 12/12/2000 |

Figure 16. Assign TMDLS dialog.

Implementation Actions

Implementation actions help define plans for waters expected to attain their standards before the next reporting cycle. There is no set list of EPA-approved implementation actions, but rather a State should enter what seems practical. An implementation action can be up to 4000 characters and can be typed directly into the database or imported as a text file that you have created with a word processing program. All implementation actions require a date by which that action will take place. An AU can have as many implementation actions as desired, however, they can only be assigned to AUs that are expected to meet their standards by the next reporting cycle.

Browse

When **Browse** is selected from the main menu screen, you are able to view and search assessment information. Users without administrative privileges will have access to the browse feature. There are two browse options: **Full Browse** and **Browse by Category**.

Full Browse

The **Full Browse** mode allows you to view descriptive information, use support designations, impairments, observed effects, assessment metadata, and sources of impairment for all AUs (Figure 17). The records can be sorted by clicking on a column heading, which will populate the **Search in Active Column for** drop-down box with all of the values in that selected column. The **Order by** drop-down box allows the user to sort by ascending or descending values. The user may change assessment information by selecting an AU and clicking the **Change** button. Assuming the user has appropriate database permissions, this will route you to whatever area you wish to update. For example, if you are on the “Uses” tab, and click on **Change**, you will be routed to the “Uses” screen, if you are on the “Sources” tab, you will be routed to the “Sources” screen, and so on. The **Refresh** button refreshes the form to show the most recent data in the database. This is helpful if you suspect that data has been changed, but the changes are not showing on the screen. **Filter On** will allow you to filter by AU. If you click on **Filter On**, all of the tabs will show *only* the AU you have selected. You can export the data in **Browse** by clicking the **Export** button. This will create a comma delimited file (.csv) in a file that you specify.

B1 - BROWSE

Category:

☒ Assessment Units
 ☐ Uses
 ☐ Metadata
 ☐ Impairments
 ☐ Observed Effects
 ☐ Sources

| ASSESSMENT UNIT | WATER NAME | WATER TYPE | WATER SIZE | SIZE UNIT | CATE |
|--------------------|------------------------|-----------------|------------|-----------|------|
| TN05130107002_0100 | Gath Branch | RIVER PERENNIAL | 2.90 | MILES | |
| TN05130107002_0300 | Unnamed Tributary of M | RIVER PERENNIAL | 1.90 | MILES | |
| TN05130107002_0400 | Bluff Spring Branch | RIVER PERENNIAL | 5.70 | MILES | |
| TN05130107002_1000 | Mountain Creek | RIVER PERENNIAL | 55.20 | MILES | |
| TN05130107004_0100 | Hickory Grove Branch | RIVER PERENNIAL | 6.50 | MILES | |
| TN05130107004_1000 | Charles Creek | RIVER PERENNIAL | 40.20 | MILES | |
| TN05130107006_0100 | Garner Branch | RIVER PERENNIAL | 9.50 | MILES | |
| TN05130107006_0200 | Caney Branch | RIVER PERENNIAL | 13.70 | MILES | |
| TN05130107006_0300 | South Prong Barren For | FRESHWATER LAKE | 37.40 | ACRES | |
| TN05130107006_0300 | South Prong Barren For | RIVER PERENNIAL | 37.40 | MILES | |
| TN05130107006_0310 | Mud Creek | RIVER PERENNIAL | 14.00 | MILES | |

Search in Active Column for:
 Order by:

Figure 17. Full Browse dialog.

Browse by Category

The **Browse by Category** option allows you to view assessment information by use support category [e.g., all Category 1 waters] (Figure 18). When a selection is made from the *Select a category* drop-down box, all AUs falling into that category will be listed on the screen. A summary of water types and sizes will also appear on the screen. The **Change** button routes the user to the “Assessment Units” screen where information can be added or deleted. Clicking on a column heading will sort the table and populate the *Search in Active Column* drop-down box. If the user selects one assessment unit, (s)he may view assessment level information by clicking on the tabs at the bottom of the screen.

B3 - BROWSE BY CATEGORY

Browse by Category CLOSE

Select a Category: Category 1

Number of Assessment Units: 330

Water Types and Sizes

| ASSESSMENT UNIT | WATER NAME |
|----------------------|-------------------------|
| TN05130107002_0400 | Bluff Spring Branch |
| ▶ TN05130107002_1000 | Mountain Creek |
| TN05130107004_1000 | Charles Creek |
| TN05130107006_0100 | Garner Branch |
| TN05130107006_0200 | Caney Branch |
| TN05130107006_0300 | South Prong Barren Fork |
| TN05130107006_0320 | Witty Creek |
| TN05130107006_0400 | North Prong Barren Fork |

Search in Active Column: GO

CHANGE Refresh

Assessment Unit

Location Description: Mountain Creek from Collins River to headwaters.

Water Types and Sizes: RIVER PERENNIAL 55.2 MILES

Navigation Tabs: AU, USES, META, OBSV, IMPAIR, SOURCES

Figure 18. Browse by Category dialog.

Look-Up Groups

Look-Up Groups allow the user to create groupings of impairments or sources in order to simplify data entry. If you create a group of impairments that are common in your State, you can select that group in the “Impairments” dialog, and choose from that short list rather than view the more than 400 impairments in the database. You can identify items in the impairment list as **Observed Effects**, so that you may assign them as observed effects to the AUs. Remember that when you make an item from the list of impairments an **Observed Effect**, it can no longer be assigned as an **Impairment** in that reporting cycle. You can also use look-up tables to change the default pollutant flag for each impairment (pollutant vs. non-pollutant). You can alter these look-up tables using the ADB **Modify** menu.

Impairment and Source Groups

The ADB v.2 already contains some groupings of impairments and sources for your convenience. For example, nitrogen is part of the “Nutrients” group. The purpose of these groups is to facilitate data entry, as well as provide a framework for creating summary reports.

The ADB v.2 allows you to create custom groups. To add or modify new groups, click **Modify** on the main menu, then click on **Look-up Groups** (Figure 19). Clicking on **Impairment** or **Source** will open the respective “Look-up Group” screens. You may do that at any point when using the ADB.

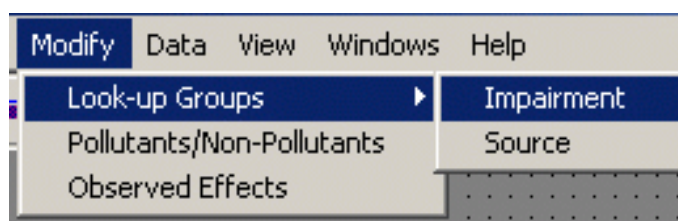


Figure 19. Look-Up Groups.

To add a new group, type the name of the group in the “New Group Name” field (Figure 20). Then click on **Create Group**. You can then select the new group from the drop-down list of group names. Add items to your new group by clicking the down arrow. Remove items from the group by clicking the up arrow.

FS - ADD IMPAIRMENT GROUPS

Impairment Groups

New Group Name: Group Name:

CHOOSE ONE

☒ SHOW ALL

☐ SHOW ONLY:

☐ SHOW CURRENTLY USED

Search

Search By:

Search String:

| Name | CAS Number |
|----------------------------------|------------|
| .alpha.-BHC | 319-84-6 |
| .alpha.-Endosulfan(Endosulfan 1) | 959-98-8 |
| .beta.-BHC | 319-85-7 |
| .beta.-Endosulfan (Endosulfan 2) | 33213-65-9 |
| .delta.-BHC | 319-86-8 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 |
| 1,1,1-Trichloroethane | 71-55-6 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 |
| 1,1,2-Trichloroethane | 79-00-5 |

| Name | CAS Number |
|---------------|------------|
| Mercury | 7439-97-6 |
| Methylmercury | 22967-92-6 |

Figure 20. Add Impairment Groups dialog.

Pollutants, Non-Pollutants, and Observed Effects

Every impairment can be categorized as either a “Pollutant” or a “Non-pollutant.” Whether or not a use is impaired by a pollutant can affect which category an AU falls in. By default, all impairments will be flagged as pollutants. You can change an impairment’s category by clicking on the **Modify** menu, and selecting **Pollutants/Non-pollutants**. If an impairment is defaulted as a non-pollutant, then every time that impairment is added to a use, the pollutant flag will be set to false. Changing the default pollutant status of an impairment will not affect any impairments that have already been added to uses, although the user can change the pollutant flag at any time.

Only impairments that have been identified as observed effects can be entered into the database as **Observed Effects**. By default, no impairments have been assigned as observed effects. Any impairment can be assigned as an observed effect, but there are some rules that must be followed (See the “Adding Observed Effects” box in this document). To assign an observed effect, click on the **Modify** menu, and then click on **Observed Effects** (Figure 21). This will open a screen where observed effects can be assigned.

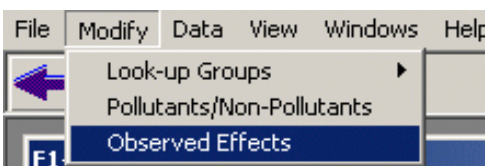


Figure 21. Modifying Look-Ups.

Can I add my own codes?

ADB v.2 contains close to 500 impairment codes, many of which come directly out of EPA's Storage and Retrieval system (STORET), and over 100 source codes. As in STORET, there will always be a need for new codes to be added. However, in the interest of national consistency, it is important that all new codes be entered through one contact. To add a new code, contact Cary McElhinney McElhinney.Cary@epamail.epa.gov

Adding Observed Effects

For a given state and cycle, no impairment code can be used as both an **Impairment** and an **Observed Effect**. For example, for TN cycle 2000, if the code "Secchi Disk Depth" is used as an observed effect, it cannot subsequently be entered as an impairment. However if, in cycle 2002, TN wants to unassign "Secchi Disk Depth" as an observed effect in the **Look-Up Table**, they can. However, if the data still contain Secchi Depth used as an observed effect, and the State tries to assign it as an impairment, the database integrity check will see that this impairment was used as an observed effect and update the **Look-Up Table** accordingly. Secchi Depth cannot be used as an impairment until it is removed from all AUs where it was used as an observed effect.

Other Features

ADB v.2 has several additional features. These features include:

- Help Messages
- Adding Assessment Methodology and Monitoring Strategy Documents
- Checking for Updates to the Database
- Adding Comments
- Adding Files to Assessment Units
- “Category Listing” Definitions
- Exporting Data
- Migrate to New Cycle
- Shell to External Applications
- Reset the Database

Help Messages

Help messages are available through **View->Show Help Messages**. The help messages change as you move to different areas of the database using the sidebar buttons on the left.

Assessment Methodology and Monitoring Strategy Documents

Two documents are required for each State/cycle combination. One document describes the State’s assessment methodology and the other document describes the State’s monitoring strategy. Both of these documents can be imported directly into the database. The database will accept four formats:

1. WordPerfect (*.wpd)
2. Word (*.doc)
3. Rich Text Format (*.rtf)
4. Adobe Portable Document Format (*.pdf)

To enter these documents into the database, click on **Documents** from the main screen. Click on the **Insert** buttons to load the documents into the database. Click on the **Get Document** buttons to save the document in the database to your local workspace. Click on the **Delete Document** buttons to remove a document from the database and upload a more current version.

Check for Updates

The **Check for Updates** feature is available from the **File** menu in the main ADB v.2 screen. You can use this feature to check for new uses, sources and impairments, as well as add any new sources, impairments and software updates to the database.

Adding Comments

ADB v.2 allows you to add comments to AUs using Rich Text Format (RTF). This allows you to create comments formatted for easier reading. You can add color, bullets, bolding, underlining, italicizing, and different fonts and font sizes. If you click on the **Add Comments** button on the “Assessment Units” dialog, the “Comment Editor” opens (Figure 22).

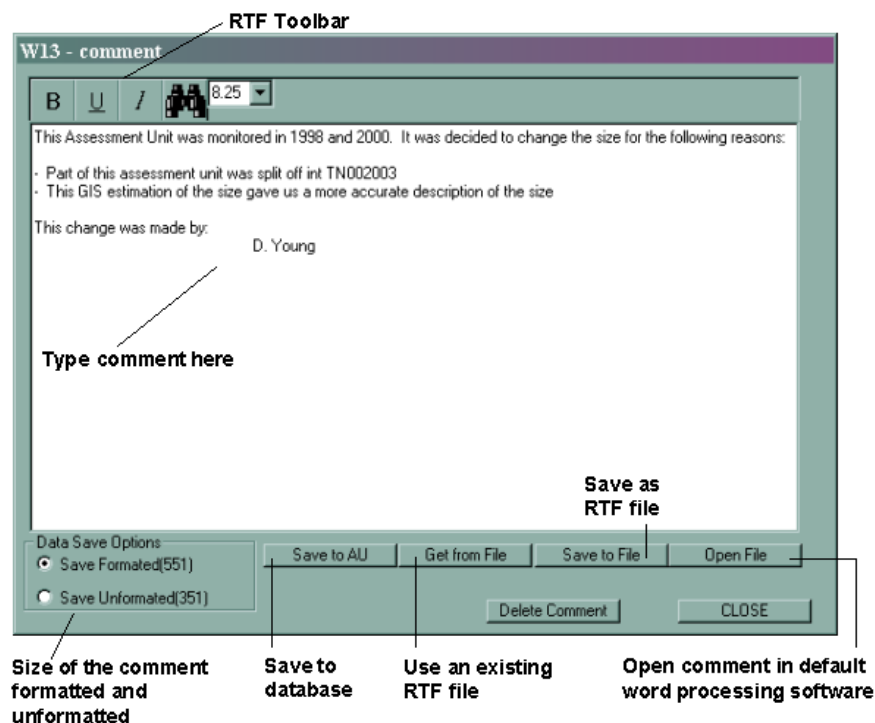


Figure 22. Comment Editor dialog.

Comments may be typed directly into this dialog or imported from other word processing documents. This feature can allow you to do more extensive editing of the created comment, including some minor word processing abilities and spell checking features that are built into the “Comment Editor.” For more extensive formatting, however, you will need to use word processing software. The following features are built into the “Comment Editor:”

- Bold
- Underline
- Italic
- Change Font Size
- Find (ctrl+F)

Comments in the ADB can be a maximum of 4,000 characters long. RTF does alter two aspects of your comments: 1) RTF comments will take up more disk space than they usually would, and 2) Viewing the comment in the database table may look a little strange as it will contain all of the RTF codes formatting.

Adding Files to Assessment Units

The ADB v.2 allows you to associate graphics or other types of files with an AU. You can add a jpeg showing a photo of the site where the assessment was performed or a lengthy document describing the AU. To associate a document with an AU, just click **Add File** on the “Assessment Units” screen. The “Add File to Assessment Unit” screen will appear (Figure 23).

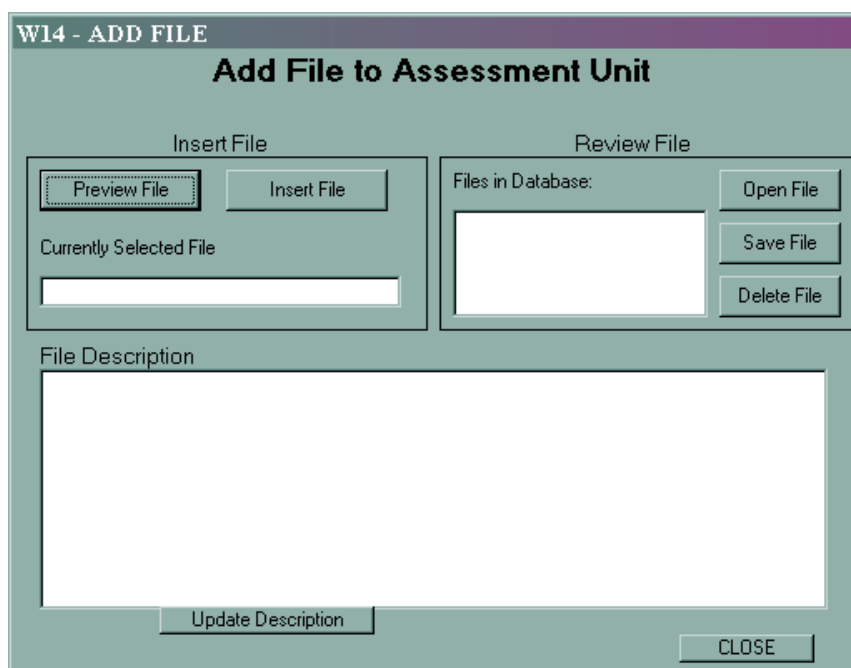


Figure 23. Add File to Assessment Unit dialog.

Click **Preview File** to add the file to the database. The file will open to allow you to review it before adding it to the database. Close the file and click **Insert File**. You will be prompted to enter a description for the file. Once files are added, you can open them, save them to another folder, or delete them by clicking one of the buttons under the “Review File” section.

There is no limit to the number of documents you can add to an AU. However, Oracle may not be the most effective way to store a large number of documents, and it may be more efficient to store documents on an NT server rather than in your database.

Category Listing Definitions

ADB v.2 contains all of the definitions for the listing categories as they appear in the *Guidance*. If at any point in the application you wish to know how a category is defined, click on **View ->Show Category Definitions** in the main menu.

Exporting Data

There are five types of exports you can perform in the **Assessments** part of the database. The data is exported in a comma delimited format. This .csv format can be opened directly in Microsoft Excel. This kind of file could be used with ArcView to display the categories of AUs in a map. In order to do this, however, a State must have a GIS coverage containing AUs with the same unique identifiers assigned in the database. To export data for the selected cycle, go to the **Data** menu and select **Data Exports**. Listed below are the data export options.

303(d) List. Export the list of AUs on the 303(d) list.

Category 4A List. Export the list of AUs that are impaired or threatened for one or more designated uses that already have a TMDL completed.

Category 4B List. Export the list of AUs that are impaired or threatened for one or more designated uses, but do not require the development of a TMDL because they are expected to attain the water quality standard in the near future.

Category 4C List. Export the list of AUs that are impaired or threatened for one or more designated uses by a non-pollutant and do not require the development of a TMDL.

Category Listing. Export a list of all the AUs and what category listing they fall into from the ADB v.2.

Migrate to New Cycle

The ADB v.2.1 or higher allows you to avoid re-entering data by giving you the option to migrate data from a previous cycle. You may choose to migrate data pertaining to AUs, use attainment, or impairments (Figure 24). From the menu bar, choose **Data ->Migrate to New Cycle**. Select the appropriate cycles in the “To” and “From” drop-down boxes, then select the data types that you want to migrate in the check boxes below. Click the **Start Migration** button to begin migrating data.

F15- Cycle Migration

Cycle Migration

MIGRATION INFORMATION

Cycle to Migrate FROM:

Cycle to Migrate TO: (i.e., 2004)

Start Migration

Tables to be Migrated

Select one or more types of tables to migrate

- ☒ **Uses**
 - ☒ **Attainments**
 - ☒ Comments
 - ☒ User Flags
 - ☒ Observed Effects
 - ☒ **Impairments**
 - ☒ Comments
 - ☒ TMDL Schedules
 - ☒ TMDLs
 - ☒ 303(d) listing IDs
 - ☒ Sources
 - ☒ **Expected to Attain Dates**
 - ☒ Implementation Actions

Other Information to Include in Migration:

- ☒ **Assessment Units**
 - ☐ Assessment Unit Comments
 - ☐ Associated Files
 - ☐ Next Scheduled Monitoring Date

Close

Figure 24. Cycle Migration dialog.

Shell to External Applications

Some ADB users have developed companion applications that perform analyses or generate reports that are not necessary to satisfy the Integrated Report requirements, but are needed to support local, State, or jurisdiction programs and reporting requirements. In the ADB v.2, there is an option to link to external applications and pass the selected AU ID to this application.

To set the external application, choose **View->External Application->Set External Application** from the menu bar. Enter the application name and navigate to the application in the **Application Path** box. You can also navigate to a button icon location (Figure 25).

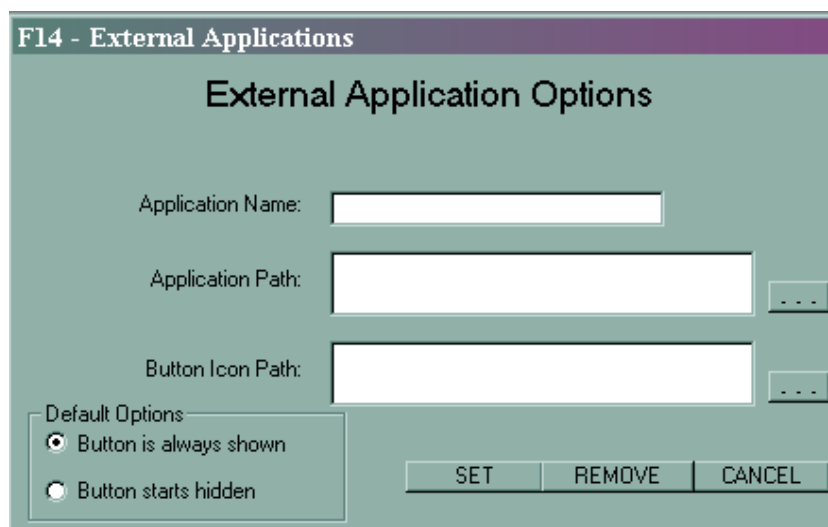


Figure 25. Set External Application.

If you do not choose a button icon, the default icon will be used. The button icon will appear beside the module icons below the menu bar (Figure 26). To launch the external application, simply click the new button.



Figure 26. Button menu.

Resetting the Database

At any time while using the ADB v.2, you may reset the database by going to the **File** menu and choosing **Reset Database**. Doing this will return you to the ADB v.2 main menu screen and reset all of the IDs, so that when you work with the database again, it will function as if you had just opened it. If you do not want to reset the database, but rather just return to the main database screen, you can click on the blue arrow button below the menu bar.

Modules

The ADB v.2 comes with three additional applications. A **Data Validation** module, a **Connections** module, and a **Reports** module. You can access these modules by using the buttons under the ADB main menu bar, or by selecting them from the *Start->Programs->ADB v.2* menu. You will be prompted with a login for these applications, as you are for the ADB. You can use the same database name, user name and password. The icons for these modules is shown below.



Data Validation Module



Connections Module



Reports Module

Data Validation Module

The **Data Validation** module serves two purposes: 1) To ensure that all dates were entered properly, and 2) To run any final data validation checks to ensure that all of the appropriate data have been entered (Figure 27).

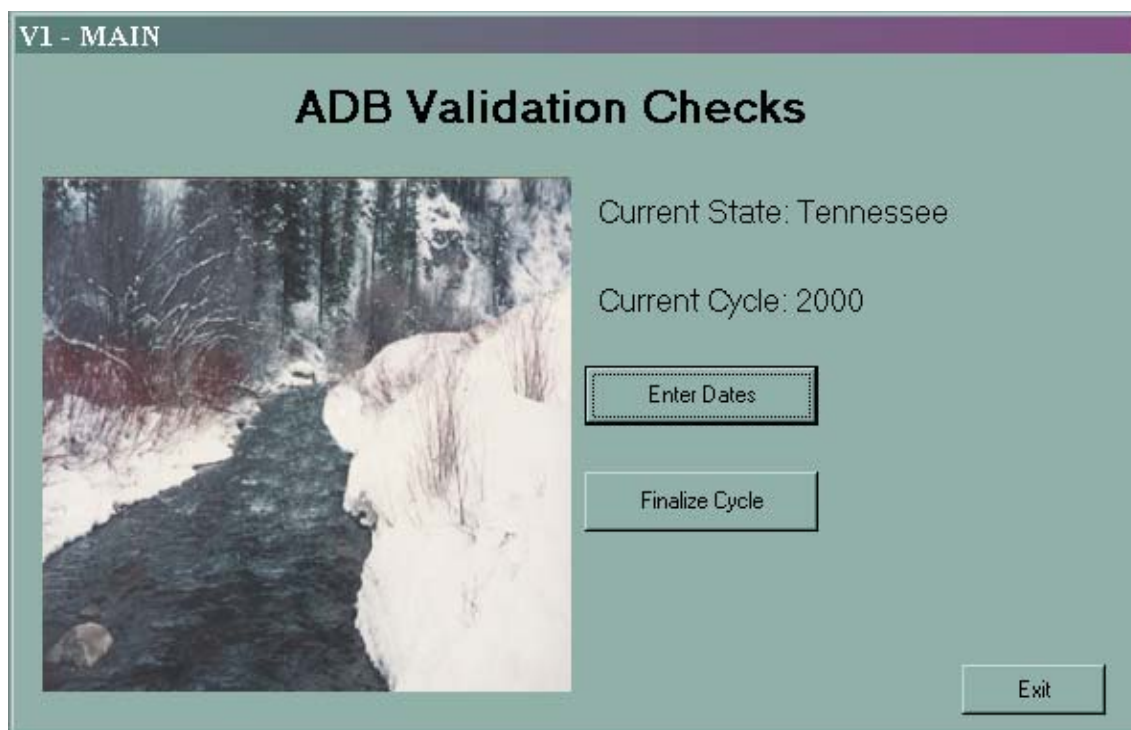


Figure 27. Data Validation Module.

Enter Dates

It is understood that often the person entering the assessment data in the ADB is not going to be the same person determining any of the crucial dates (i.e., date scheduled to receive a TMDL) for the AUs. The **Enter Dates** feature (Figure 28) allows you to view and export a list of all of items requiring a dates to a comma delimited text file (*.csv), which can be opened using Excel. This file can then be sent to the person responsible for these crucial dates. That person can fill in the dates, save the file as a .csv file, and return the file to the person responsible for the ADB. The validation module will allow you to import this file and will update all of the crucial dates for you. You can also enter the dates directly into this form with the “Assigned Date” box.

V2 - Date Validation

Date Validation

Select Which Dates to Work With

☐ Expected to Attain Dates

☐ Monitoring Dates

☒ Scheduling of TMDL Dates

View Options

☒ Show only IDs that require a date

☐ Show all IDs that can have a date assigned

Current Assessment Unit

AU-1E

Assigned Date

Update

Export list

Import List

| ID305B | WATER NAME | USE_DESC | IMPAIRMENT_NAME | TMDL SCHE |
|--------|------------------------|------------|--------------------------|-----------|
| AU-1E | Sample Assessment Unit | Recreation | Alterations in wetland h | |
| AU-1E | Sample Assessment Unit | Recreation | Total Fecal Coliform | |

This is a listing of all the assessment_units that are in Category 5 that need a TMDL schedule assigned. TMDL schedule is a requirement for all Category 5 impairments

CLOSE

Figure 28. Date Validation dialog.

Finalize Cycle

When you finish a reporting cycle, the **Finalize Cycle** feature can help you make sure that your data has all of the necessary components. The **Finalize Cycle** feature will create log files of all the errors that it found during the check. To use the feature, check the appropriate box for the validation check you want to perform on the “Finalize Cycle” dialog (Figure 29) and click **Begin Validation Checks**. You will be prompted for a storage location for the log files. The log files will be saved in .csv format, which can be opened with a number of different software programs, including Excel. These log files can also be viewed by opening them in the “Finalize Cycle” dialog. The log files will give you a listing of all of the AUs that may have problems to be fixed. You can also view errors in the “Finalize Cycle” dialog by clicking the **Open Log** button beside the appropriate validation check box (Figure 30).

V6 - FINALIZE CYCLE

Finalize Cycle

State: Tennessee
Cycle: 1999

Begin Validation Checks...

Potential Errors for:

Error Description:

Open Log ☐ Check Water Type
Open Log ☐ Check Locations
Open Log ☐ Check Scheduled Monitoring Dates
Open Log ☐ Check TMDL Schedule Dates
Open Log ☐ Check Categories
Open Log ☐ Check Impairments
Open Log ☐ Check Assessment Documentation

Checking a box will perform that validation check

CLOSE

Figure 29. The Finalize Cycle feature allows you to perform data validation check on your ADB data.

Open Log ☒ TMDL Dates found errors.

Figure 30. Error found in Validation check.

You may use the log files created by this process to limit the list of AUs accessible in the “Assessment Units” screen of the main ADB v.2. This is helpful if the validation check encounters problems. The log file can limit the AUs to only those that need additional information or corrections. To limit the list of AUs by a text file, open the ADB, click **Assessments**, and pick **Limit by Text File** from “Limit List By:” dialog box in the “Select an Assessment Unit” section of the “Assessment Units” screen. In the “Limit by List” dialog (Figure 31), click on **Choose New File** to navigate to the file you want to by which you want to limit your AUs. In the drop-down list, pick the field in the .csv file that corresponds to **Assessment Unit ID**, then click **Finish** and **Close**.

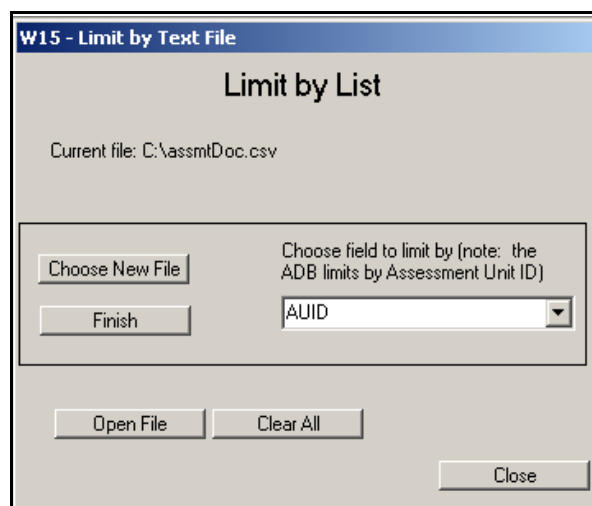


Figure 31. Limit by List dialog.

Connections Module

The ADB v.2 comes with a companion application called **Connections**. This application allows the user to access data from other databases (i.e., ORACLE, Access, SQL Server, or any ODBC compliant database). The **Connections** module can be used link to tables of information other databases to be viewed within the ADB. Any data accessed through the **Connections** module will not be included in the electronic submission to EPA. This feature is solely for the convenience of the ADB users. When you start the **Connections** module, you will see the dialog shown in Figure 32.

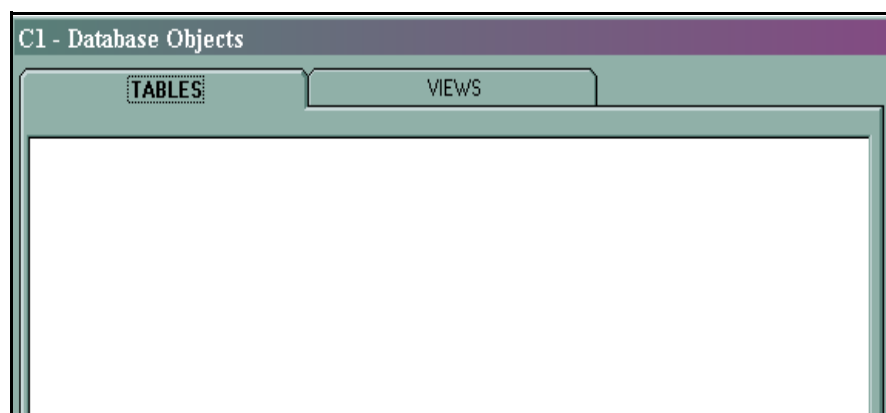


Figure 32. Connection Module dialog.

There are three toolbar menus to aid you in setting up **Connections**. The **File** menu allows you to manage database connections or quit the application. The **Save database information** option under the **File** menu allows you to save database connections so they appear under **Existing Connections** during subsequent uses of the application. The user may click on **Quit** under the **File** menu or press Control+Q to exit the application. The **Connections** menu allows you to manage table connections. The **Windows** menu lists the names of all of the open screens, and designates the active screen with a checkmark.

Establishing a Database Connection

Two types of database connections must be established in order to access data: a connection to the database file itself, and then a connection to the actual table or query you want to access. You can establish a database connection by clicking on **Connect to a database** under the **File** menu. This brings up the screen shown in Figure 33.

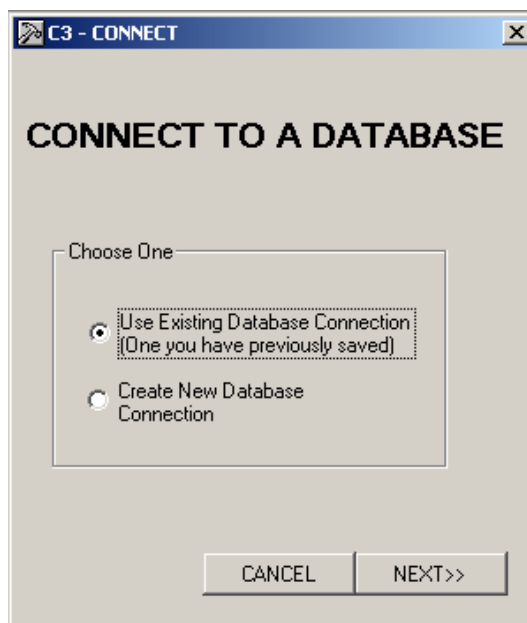


Figure 33. Connect to a Database dialog.

You can choose to use a database connection established in a previous session, or you can create a new connection. To use an existing connection, select the **Use Existing Database Connection** radio button option and click **Next**. This brings up a dialog listing all saved database connections (Figure 34). You can delete old database connections or select one to open. If the database you are connecting to is password-protected, you will be prompted to enter a password. Otherwise, the names of the tables from the database will appear on the "Tables" tab, and the names of the queries will appear in the "Views" tab.

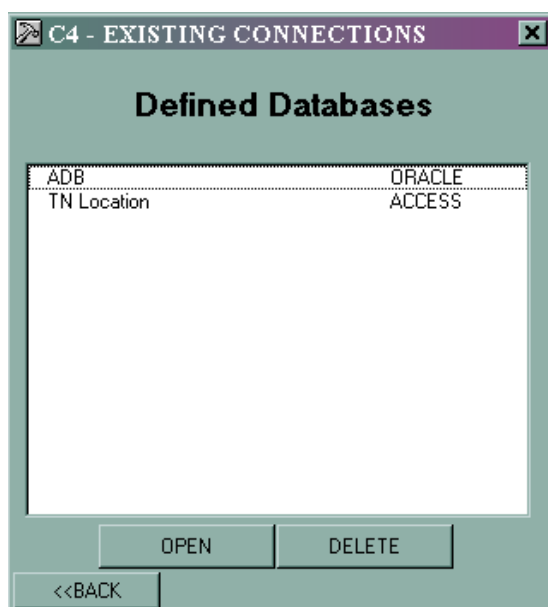


Figure 34. Existing Database Connections.

To establish a new database connection, select the **Create New Database Connection** radio button from the “Connect to a database” screen (Figure 33). You will be prompted to select the database type (i.e., ORACLE, SQL Server, Access, or ODBC Data Source) (Figure 35).

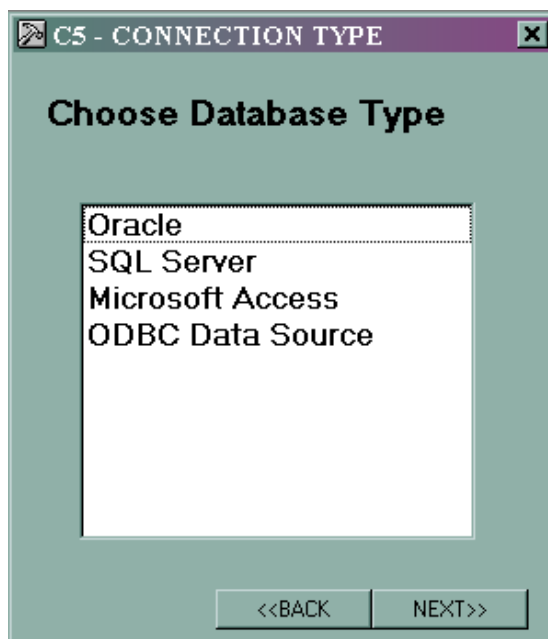


Figure 35. Create a new database connection.

After selecting a database format, you will be prompted to enter the database location, specify security options, and decide whether the connection will be saved after the session ends. You may click on the “...” button to navigate to the database file rather than typing in the path. Security options allow the user to limit access by a user name and password. The **Test Connection** button allows you to test whether the connection will be successfully established. If the connection is successful, you will receive the message “Test Successful.” Checking the “Save connection on finish” box will enable you to access this connection in a later database session. You should click on the **Finish** button to establish the connection. The database tables will appear on the “Tables” tab, and the queries will appear in the “Views” tab.

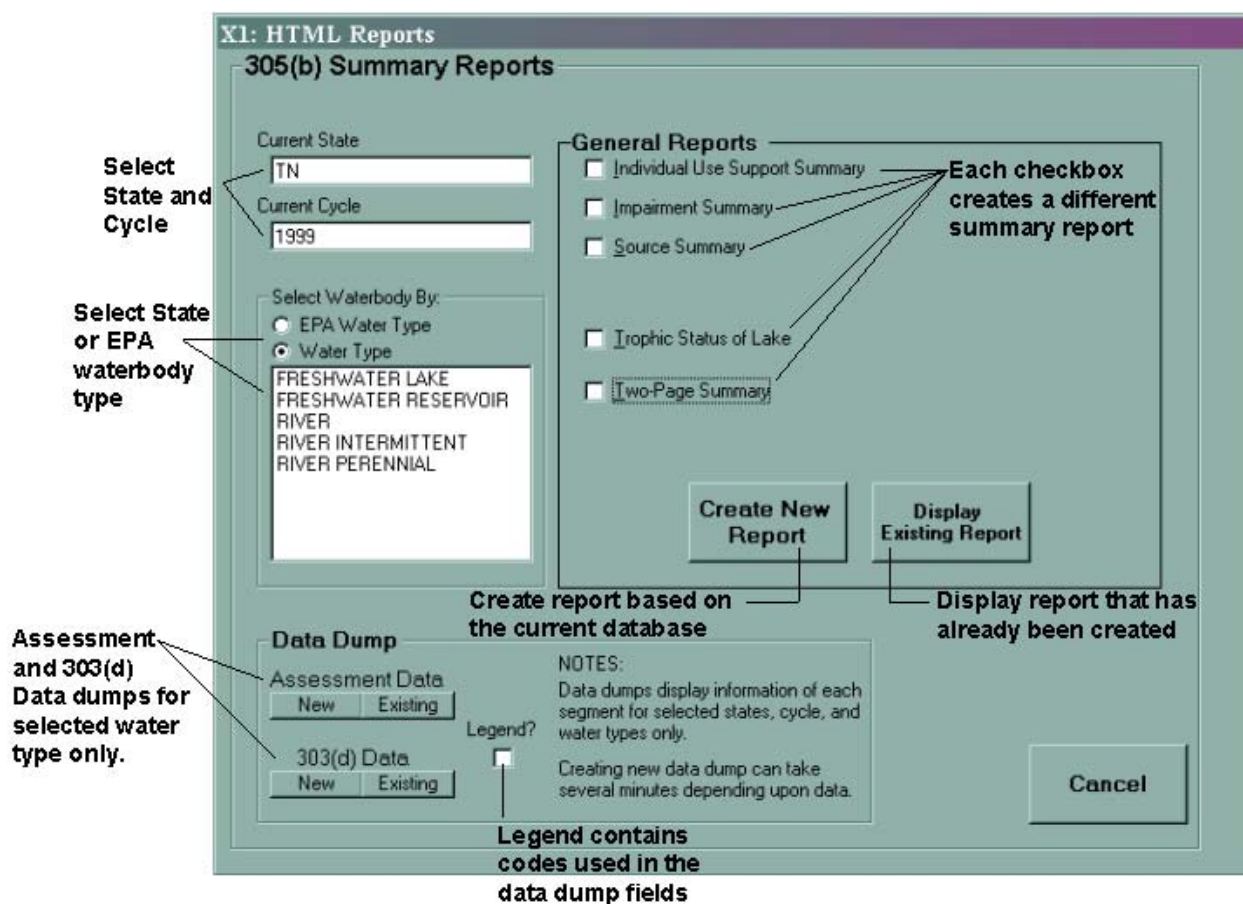


Figure 37. 305(b) Summary Reports dialog.

Establishing a Table Connection

You can create table connections to allow you view data while you are working in the ADB. For example, if you have an Access database that contains data associated with your assessment units, but are not stored in the ADB, you can create a connection to that Access database and view and *update* that Access data as you are working in the ADB.

You can manage table connections via the **Connections** menu. The **View Existing Connection** option brings up a screen of all saved table connections. You can delete table connections from this

screen or select one to open. When the connection is opened, you will see a table of data; the same table that may be viewed within the ADB.

You can create a new table connection by choosing a table or query name and selecting **Make New Table Connection** from the **Connections** menu. You will be prompted to name the new connection. You can limit the information included in the table connection by AU ID, Cycle, or TMDL ID.

Once the table connection is made, you may open it by double-clicking on the table name in the “Tables” tab. When the table is open, there are a variety of functions you can use to modify it by making a field active and right-clicking on the field name. You may:

- Sort Ascending/Descending
- Copy/Paste
- Filter
- Find
- Export Data

It may be useful to connect to the ADB tables. Doing this will allow you to create custom queries to answer questions like: “Which Assessment Units that have the Fish and Aquatic designated use are on the Category 5 list for impairments from Iron?” To answer this question, you can connect to the ADB by selecting **Create New Database Connection** from the “Connect to a Database” screen. Select **Oracle** as the database type. You will be prompted to enter the database name, user, and password. Use the default settings (ADB, ADBUSER, ADBUSER) or ask your Oracle DBA for the appropriate entries. Click on the “Views” tab and select **Category 5 Impairments**. From the **Connections** menu, choose **Advanced SQL**. This brings up a screen that will allow you to write a query (in much the same way that a query would be written in Access).

You may include fields in your query output by checking the boxes next to the field names. The selected field names will appear in a box at the bottom of the screen. Several drop-down boxes on the right-hand side of the screen can help you compose a query. One drop-down box contains a list of all the field names. Pick the “State” field from this box. The middle drop-down box allows you to select the filter type (i.e. =, >, <, >=, <=, or <>). The right-hand drop-down box allows you to type in or select the filter criteria. Choose a State from this box. You can also click **Get Values** to obtain a full list of available values for the selected field. Once all of the selection criteria have been entered, click the **Add** button. You can add additional criteria using “and” or “or” statements. Go back to the fields drop-down box and choose **Impairment Name**. Type “Iron” into the box on the right or use the **Get Values** button to be able to pick from a list (see Figure 36). Once all of the queries have been entered, you can either click **Test** to see a preview of the table, or click **Finish** to execute your query and exit the dialog. When you click **Finish** to complete the query, you will be prompted to name the query. If you click **Cancel**, the query information will be lost.

Figure 36. Advanced SQL dialog.

Viewing Data Within the ADB

Once a table connection has been established in the *Connections* module, you may access the data through the ADB. All saved table connections can be accessed through the *Show Connections* option under the *View* menu. This option allows you to view the data, and copy and paste it into the ADB.

Reports Module

The **Reports** module allows users to create “canned” reports. You can access the **Reports** module by going to *Start -> Programs-> ADBv2 -> Reports* or by clicking on the button below the menu bar in the ADB application.



There are two types of reports that can be generated in the module: 1) *Summary Reports*, and 2) *Two-Page Reports*.

Summary Reports

Several different report types can be generated in “Summary Reports.” These reports summarize data in the database and create a table in html format. You can also create two data dumps from the “Summary Reports” screen (Figure 37).

Two-Page Reports

The “Two-Page Summary Reports” dialog list assessment information for each AU that you select. You can choose AUs from the first screen, or you can click **Next >>** to specify a water type that will limit the AUs you can choose from (Figure 38).

X4: Two Page Summary Report

Select Criteria

State: TN
Cycle: 1999

Select Water Type

RIVER PERENNIAL

<< Previous

Create Report

Select Assessment Unit(s)

- TN05130107002_0100
- TN05130107002_0300
- TN05130107002_0400
- TN05130107002_1000
- TN05130107004_0100
- TN05130107004_1000

Report Cancel

Figure 38. Two-Page Summary Report dialog.

Submitting the Database

After the data for a reporting cycle is correctly entered into the database, it should be submitted to your Regional Coordinator and Cary McElhinney (McElhinney.Cary@epamail.epa.gov) at EPA Headquarters. Your database submission should consist of a .zip file that includes: 1) The .XML files created by backing up your data (see Figure 39), and 2) Your Assessment Methodology and Monitoring Strategy documents. For information on backing up your data, see the section in this user's guide on "Getting Started." For information on how to save the Assessment Methodology and Monitoring Strategy documents to your local workspace, see the section in this guide on "Other Features." When submitting your data, also be sure to include any GIS materials that you have developed for the purpose of recording locational information.

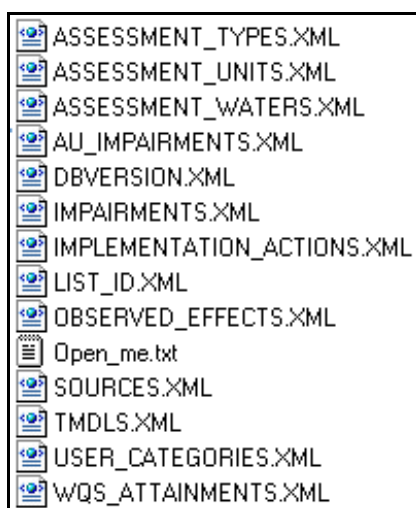


Figure 39. XML files to include in database submission.

Frequently Asked Questions

Q: If I begin using the Access version of the ADB v.2 and later decide to use the Oracle version, will this be an easy transition?

A: Yes. All you would need to do is back-up your data in the Access version, then use the **Replace** feature (**Data->Back-up/Restore**) to import your data once you have the Oracle version installed.

Q: Can I change the lookup tables?

A: No, the lookup tables cannot be changed. This is to ensure national reporting consistency.

Q: Where do I enter the listing category for an Assessment Unit?

A: You do not have to enter the listing category. The ADB v.2 will automatically assign a category to the AU based on the information you enter in the database.

Q: How do I get a new impairment code added to the database?

A: Before attempting to get a new code added, you should use the ***Check for Updates*** feature (available from the ***File*** menu in the ADB v.2 main screen). This will check to see whether new sources or impairments have been added. If you still need to add a code, contact Cary McElhinney at Mcelhinney.Cary@epamail.epa.gov

User Support and Technical Assistance

If you require User Support or Technical Assistance for ADB v.2 you can call EPA's toll-free help line at 1-800-844-0638 or e-mail owsupport@rti.org.

APPENDIX A - ADB Install Guide

System Requirements:

Client (Interface):

Windows 95, 98, NT, 2000
200 MHZ Processor
64 MB RAM
20 MB Disk Space
Oracle 8.1.x Client*

Server (Database):

Oracle 8.1.x Server
500 mHz Processor
128 MB RAM
280 MB Disk Space

Installing the ADB v.2:

Before Getting Started:

Before you install the ADB, make sure of all the following:

1. You have Administrative privileges on your computer.
2. Any previous installations of ADB v.2 have been removed, including both the Interface and the Database (note: this install will not interfere with ADB v.1.x).
3. If you are installing the Database, make sure you don't have another Oracle database named 'ADB'.
4. You are running Oracle 8.1.x, either the client or the server.
5. If the folder C:\ADBdata already exists on your PC, either delete it, or rename it.

Interface:

To install the ADB Interface (which contains all of the forms and graphical user interface to interact with the database), double click on ADBSetup.exe. This will start the setup program. To install only the Interface, click on the option that says, "Install Application Only". This will install the ADB Interface on your computer. You will be prompted to choose a location to install the ADB Interface. By default, it will install in C:\Program Files\ADB v. 2.

Database:

To install the ADB database (which contains all of the data tables, and Oracle data structure), double click on ADBSetup.exe. This will start the setup program. To install both the User Interface and the Database, click on the option that says, "Install Application and ADB Database". To install only the Database, click on the option that says, "Install ADB Database only." The install program will create the database in the folder C:\ADBdata. This install may take up to 20 minutes. The install will create one user, ADBuser, with a password of ADBuser. This user has all of the basic privileges to Add, Delete, Update, and View data. This user does not, however, have the privileges to Delete or Modify any of the existing

table or view structures. The install creates a log called log.txt which will show if any problems were encountered during the install

DBA Tools:

Tablespaces:

The ADB database requires the following tablespaces:

SYSTEM: 75 MB
RBS (rollback): 50 MB
USERS: 10 MB
TEMP: 20 MB
TOOLS: 8 MB
ADB_INDX: 10 MB
ADB_DATA: 100 MB

Users:

The ADB comes with a default user: ADBuser. To add new users, use the following script:

```
CREATE USER &USERNAME IDENTIFIED BY &PASSWORD
DEFAULT TABLESPACE USERS
TEMPORARY TABLESPACE TEMP
QUOTA UNLIMITED ON USERS
QUOTA UNLIMITED ON TEMP;
```

Synonyms:

In order for a new user to be able to access the data, they will need to have synonyms created. To create synonyms for a new user, run the SYN.sql script.

Privileges:

There are two roles built into the ADB, the ADB_ADMIN_ROLE and the ADB_USER_ROLE. The ADB_ADMIN_ROLE has all the privileges necessary to Add, Delete, and Modify data. The ADB_USER_ROLE can only View data. Grant these roles to users based on what level of access to the database you want them to have. To grant roles, use the following script:

```
GRANT ADB_ADMIN_ROLE TO &USERNAME;
```

or

```
GRANT ADB_USER_ROLE TO &USERNAME;
```

This document is intended to assist a user in installing the ADB v.2. It is not expected that a user be fully familiar with all of the aspects of an Oracle database in order to install and run the software.

*ADB v.2 front end will work with the Oracle 7 client, however, adding files and documents will not work.

Troubleshooting

| PROBLEM | CAUSE | FIX |
|---|---|--|
| Error: No Listener | The Oracle listener has not been started. | Start the listener by running LSNRCTL.EXE. This file is located in the Oracle home/bin. Type 'Start' to start the listener. |
| Error: Provider not available | This error can occur when you try to connect to the ADB database via the Interface. This error is caused by a corrupt .dll file (msdaora.dll) on your computer. | Run the Internet Explorer Service Pack 2. This will replace all of these critical data connection .dlls. This service pack is available at http://windowsupdate.microsoft.com/ |
| Error: No Connect Privileges | This error can occur if the user you are trying to log on as does not have connect privileges. | Make sure that the proper role has been assigned to the user; either ADB_ADMIN_ROLE or ADB_USER_ROLE. |
| When I try to install the database, I just get a DOS prompt with a lot of scrolling data. | This is not an error, but rather is part of the install. The Setup must run through a number of default Oracle scripts in order to create the database. | What you should expect when you see the DOS prompt is that it should stall for a minute as it creates the tablespaces (this is normal). If you are ever prompted for a password or a username, then the install was <i>NOT</i> successful. Check the log.txt file in C:\ADBdata\Build to see a description of what happened. |
| Log.txt -Not Connected | This error can occur during the installation of the database. The cause of this error is that the setup scripts are unable to connect to the Oracle database. There are two possible causes for this error. Either the database did not setup properly or the database requires a TNSNAMES entry in order to connect to the database. | Check to see if the folder C:\ADBdata\Build was created along with the folders C:\ADBdata\admin and C:\ADBdata\oradata. See if the admin folder and oradata folder contain an 'ADB' folder. Create a TNSNAMES entry for the ADB. Run makedbNt.bat |
| Error: Service not Started | This error can occur if the ADB Oracle database is not mounted. | Go to Start; Programs; ADB v.2 and click on Start Database. |
| Error: Invalid UserName/Password | This error can occur if either the user does not exist or if the password supplied for that user is incorrect | Make sure the user exists. If the user exists, then make sure the password is correct. |
| Error: TNS could not resolve service name | This error can occur if your database name does not match anything in your TNSNAMES.ora file. | Make sure you have pointed to the database using the TNSNAMES file. You can modify TNSNAMES by using the Oracle program 'Net8 Configuration Assistant'. |
| Error on Install: Oraclient8.dll was not found | This error occurs if the Oracle 8 client is not installed on your computer | Install the Oracle 8 client. |
| Error: No Table or Synonym Invalid | This error occurs if the synonyms were not created properly for the tables and views. | Run syn.sql to create the synonyms for a user. |
| Error: Data type not supported by this client. | This error occurs if you try to use the file or document features of the ADB and you are using an Oracle 7 client. | The document and file features of the ADB will not work with the Oracle 7 client. However, the rest of the database will function fine. You can either install the Oracle 8 client or continue to use the Oracle 7 client and not use the document or file features. |